

RAW SEQUENCE LISTING

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) no errors detected.

Application Serial Number: 09/980,559C
Source: 1FW/6
Date Processed by STIC: 3/23/06

ENTERED

CRF Errors Edited by the STIC Systems Branch

Serial Number: 09/980,559C

CRF Edit Date: 3/24/06
Edited by: in

___ Realigned nucleic acid/amino acid numbers/text in cases where the sequence text "wrapped" to the next line

___ Corrected the SEQ ID NO. Sequence numbers edited were:

___ Inserted or corrected a nucleic number at the end of a nucleic line. SEQ ID NO's edited:

___ Deleted: ___ invalid beginning/end-of-file text ; ___ page numbers

___ Inserted mandatory headings/numeric identifiers, specifically:

___ Moved responses to same line as heading/numeric identifier, specifically:

___ Other: inserted hard returns throughout the sequence
listing



IFW16

RAW SEQUENCE LISTING

DATE: 03/24/2006

PATENT APPLICATION: US/09/980,559C

TIME: 18:44:23

Input Set : A:\PTO.txt

Output Set: N:\CRF4\03242006\I980559C.raw

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4 <110> APPLICANT: Yanagi, Masayuki
5     Emerson, Suzanne
6     Bukh, Jens
7     Purcell, Robert
9 <120> TITLE OF INVENTION: CLONED GENOME OF INFECTIOUS HEPATITIS C
10    VIRUSES OF GENOTYPE 2a AND USES THEREOF
13 <130> FILE REFERENCE: NIH255.001NP
15 <140> CURRENT APPLICATION NUMBER: US 09/980,559C
16 <141> CURRENT FILING DATE: 2002-05-14
18 <150> PRIOR APPLICATION NUMBER: PCT/US00/15446
19 <151> PRIOR FILING DATE: 2000-06-02
21 <150> PRIOR APPLICATION NUMBER: US 60/137,693
22 <151> PRIOR FILING DATE: 1999-06-04
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197 <210> SEQ ID NO: 2

198 <211> LENGTH: 3033

199 <212> TYPE: PRT

200 <213> ORGANISM: Hepatitis C virus

202 <400> SEQUENCE: 2

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204 1 5 10 15

205 Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly

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211 Ile Pro Lys Asp Arg Arg Ser Thr Gly Lys Ser Trp Gly Lys Pro Gly
212 65          70          75          80
213 Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Leu Gly Trp Ala Gly Trp
214          85          90          95
215 Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Asn Asp Pro
216          100          105          110
217 Arg His Arg Ser Arg Asn Val Gly Lys Val Ile Asp Thr Leu Thr Cys
218          115          120          125
219 Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Val Val Gly Ala Pro Leu
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222 145          150          155          160
223 Gly Val Asn Phe Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile
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226          180          185          190
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228          195          200          205
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230          210          215          220
231 Gly Cys Val Pro Cys Glu Lys Val Gly Asn Ala Ser Gln Cys Trp Ile
232 225          230          235          240
233 Pro Val Ser Pro Asn Val Ala Val Gln Arg Pro Gly Ala Leu Thr Gln
234          245          250          255
235 Gly Leu Arg Thr His Ile Asp Met Val Val Met Ser Ala Thr Leu Cys
236          260          265          270
237 Ser Ala Leu Tyr Val Gly Asp Leu Cys Gly Gly Val Met Leu Ala Ala
238          275          280          285
239 Gln Met Phe Ile Val Ser Pro Gln His His Trp Phe Val Gln Asp Cys
240          290          295          300
241 Asn Cys Ser Ile Tyr Pro Gly Thr Ile Thr Gly His Arg Met Ala Trp
242 305          310          315          320
243 Asp Met Met Met Asn Trp Ser Pro Thr Ala Thr Met Ile Leu Ala Tyr
244          325          330          335
245 Ala Met Arg Val Pro Glu Val Ile Ile Asp Ile Ile Ser Gly Ala His
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247 Trp Gly Val Met Phe Gly Leu Ala Tyr Phe Ser Met Gln Gly Ala Trp
248          355          360          365
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250          370          375          380
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252 385          390          395          400
253 Ser Leu Phe Asp Met Gly Pro Arg Gln Lys Ile Gln Leu Val Asn Thr
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 7 Purcell, Robert
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 15 <140> CURRENT APPLICATION NUMBER: US 09/980,559C
 16 <141> CURRENT FILING DATE: 2002-05-14
 18 <150> PRIOR APPLICATION NUMBER: PCT/US00/15446
 19 <151> PRIOR FILING DATE: 2000-06-02
 21 <150> PRIOR APPLICATION NUMBER: US 60/137,693
 22 <151> PRIOR FILING DATE: 1999-06-04
 24 <160> NUMBER OF SEQ ID NOS: 70
 26 <170> SOFTWARE: FastSEQ for Windows Version 4.0

see
pp 2-8
Does Not Comply
Corrected Diskette Needed

ERRORED SEQUENCES

28 <210> SEQ ID NO: 1
 29 <211> LENGTH: 9711
 30 <212> TYPE: DNA
 31 <213> ORGANISM: Hepatitis C virus
 33 <400> SEQUENCE: 1
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 35 cttcacgcag aaagcgtcta gccatggcgt tagtatgagt gtcgtacagc ctccaggccc 120
 36 cccctccccg ggagagccat agtggctctgc ggaaccggtg agtacaccgg aattgccggg 180
 37 aagactgggt cctttcttgg ataaaccac tctatgcccg gccatttggg cgtgcccccg 240
 38 caagactgct agccgagtag cgttgggttg cgaaaggcct tgtggtactg cctgataagg 300
 39 tgcttgcgag tgccccggga ggtctcgtag accgtgcacc atgagcaca atcctaaacc 360
 40 tcaaagaaaa accaaaagaa acaccaaccg tcgcccacaa gacgttaagt ttccggggcg 420
 41 cggccagatc gttggcggag tatacttggt gccgcgcagg ggccccagg tgggtgtgcg 480
 42 cgcgacaagg aagacttcgg agcgggtccca gccacgtgga aggcgccagc ccatccctaa 540
 43 agatcggcgc tccactggca aatcctgggg aaaaccagga taccctggc ccctatacgg 600
 44 gaatgaggga ctcggtcggg caggatggct cctgtcccc cgagggtccc gtcctctctg 660
 45 gggccccaat gacccccggc ataggctcgc caacgtgggt aagggtcatc ataccctaac 720
 46 gtgcggcttt gccgacctca tggggtacat ccctgtcgtg ggcgccccgc tcggcggcgt 780
 47 cgccagagct ctgcgcgatg gcgtgagagt cctggaggac ggggttaatt ttgcaacagg 840
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 49 cccggtctcc gctgccgaag tgaagaacat cagtaccggc tacatggtga ctaacgactg 960
 50 caccaatgac agcattacct ggcagctcca ggctgctgtc ctccacgtcc ccgggtgctg 1020
 51 cccgtgcgag aaagtgggga atgcatctca gtgctggata ccggtctcac cgaatgtggc 1080
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2

RAW SEQUENCE LISTING

DATE: 03/24/2006

PATENT APPLICATION: US/09/980,559C

TIME: 18:31:17

Input Set : A:\PTO.txt

Output Set: N:\CRF4\03242006\I980559C.raw

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153 gccttcgata ccatcagaat acatgctccc caagaagagg ttcccaccag ctttaccggc 7200
154 ctgggcacgg cctgattaca acccaccgct tgtggaatcg tggaaaaggc cagattacca 7260
155 accggccact gttgcgggct gtgctctccc tctctctagg aaaaccccca cgctctcccc 7320
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157 ggccattaag tcttttggcc agcccccccc aagcggcgat tcaggccttt ccacgggggc 7440
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163 cttgagcaac tccctgttgc gatatacaca caaggtgtac tgtaccacaa caaagagcgc 7800
164 ctactaagg gctaaaaagg taacttttga taggatgcaa gtgctcgact cctactacga 7860
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166 ggaggaggct tgccagttaa ccccacccca ttctgcaaga tctaatatg ggtttggggc 7980
167 taaggaggct cgcagcttgt ccgggagggc cgtaaacac atcaagtcg tgtggaagga 8040
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192 cttttttttt tttttttttt tttttttttt tttttttttt tttttttttt tttttttttt 9540
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194 tactttcttt cctggtgggt ccatcttagc cctagtcacg gctagctgtg aaaggtccgt 9660
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196 <211> LENGTH: 3033
197 <212> TYPE: PRT
198 <213> ORGANISM: Hepatitis C virus

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Insert
a hard
return

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/980,559C

DATE: 03/24/2006

TIME: 18:31:17

Input Set : A:\PTO.txt

Output Set: N:\CRF4\03242006\I980559C.raw

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 744 gcgtgtctca tgcccgcccc cgctgggtct ggttttgctt actcctgctc gctgcagggg 9360
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 747 ttcttttttt cctttctttt tcccttcttt aatggtggct ccactcttagc cctagtcacg 9540
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insert
hard
return

E--> 749 gcagatcatg t 9611<210> 4
 750 <211> LENGTH: 3015
 751 <212> TYPE: PRT
 752 <213> ORGANISM: Hepatitis C virus

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 756 1 5 10 15
 757 Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
 758 20 25 30
 759 Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
 760 35 40 45
 761 Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
 762 50 55 60
 763 Ile Pro Lys Asp Arg Arg Ser Thr Gly Lys Ser Trp Gly Lys Pro Gly
 764 65 70 75 80
 765 Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Leu Gly Trp Ala Gly Trp
 766 85 90 95
 767 Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Asn Asp Pro
 768 100 105 110
 769 Arg His Arg Ser Arg Asn Val Gly Lys Val Ile Asp Thr Leu Thr Cys
 770 115 120 125
 771 Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Val Val Gly Ala Pro Leu
 772 130 135 140
 773 Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Val Leu Glu Asp
 774 145 150 155 160
 775 Gly Val Asn Phe Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile
 776 165 170 175
 777 Phe Leu Leu Ala Leu Leu Ser Cys Ile Thr Thr Pro Val Ser Ala Ala
 778 180 185 190
 779 Glu Val Lys Asn Ile Ser Thr Gly Tyr Met Val Thr Asn Asp Cys Thr
 780 195 200 205
 781 Asn Asp Ser Ile Thr Trp Gln Leu Gln Ala Ala Val Leu His Val Pro
 782 210 215 220
 783 Gly Cys Val Pro Cys Glu Lys Val Gly Asn Ala Ser Gln Cys Trp Ile
 784 225 230 235 240
 785 Pro Val Ser Pro Asn Val Ala Val Gln Arg Pro Gly Ala Leu Thr Gln
 786 245 250 255
 787 Gly Leu Arg Thr His Ile Asp Met Val Val Met Ser Ala Thr Leu Cys
 788 260 265 270
 789 Ser Ala Leu Tyr Val Gly Asp Leu Cys Gly Gly Val Met Leu Ala Ala
 790 275 280 285

4

RAW SEQUENCE LISTING

DATE: 03/24/2006

PATENT APPLICATION: US/09/980,559C

TIME: 18:31:17

Input Set : A:\PTO.txt

Output Set: N:\CRF4\03242006\I980559C.raw

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1286 taacatcatg ctccctccaac gtgtcagtcg ccacagacgg cgctggaaag aggggtctact 8760
1287 accttaccgg tgaccctaca acccccctcg cgagagccgc gtggggagaca gcaagacaca 8820
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1289 tgatactgat gaccattttc tttagcgtcc tcatagccag ggatcagctt gaacaggctc 8940
1290 ttaactgtga gatctacgga gctgtctact ccatagaacc actggatcta cctccaatca 9000
1291 ttcaaagact ccatggcctc agcgcatttt cactccacag ttactctcca ggtgaaatca 9060
1292 atagggtggc cgcagtcctc agaaaacttg ggggtcccgc cttgcgagct tggagacacc 9120
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1298 catttcctgt tttttttttt tttttttttt tttttttttt tttttttttt tttcctttcc 9480
1299 ttcttttttt cctttctttt tcccttcttt aatggtggct ccatcttagc cctagtcacg 9540
1300 gctagctgtg aaagggtccg gagccgcatg actgcagaga gtgctgatac tggcctctct 9600

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hand
return

E--> 1301 gcagatcatg t 9611<210> 6
 1302 <211> LENGTH: 3015
 1303 <212> TYPE: PRT
 1304 <213> ORGANISM: Hepatitis C virus

E--> 1306 <400> SEQUENCE: 6

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1309	Arg	Arg	Pro	Gln	Asp	Val	Lys	Phe	Pro	Gly	Gly	Gly	Gln	Ile	Val	Gly
1310				20					25					30		
1311	Gly	Val	Tyr	Leu	Leu	Pro	Arg	Arg	Gly	Pro	Arg	Leu	Gly	Val	Arg	Ala
1312			35					40					45			
1313	Thr	Arg	Lys	Thr	Ser	Glu	Arg	Ser	Gln	Pro	Arg	Gly	Arg	Arg	Gln	Pro
1314		50					55					60				
1315	Ile	Pro	Lys	Asp	Arg	Arg	Ser	Thr	Gly	Lys	Ser	Trp	Gly	Lys	Pro	Gly
1316	65					70				75					80	
1317	Tyr	Pro	Trp	Pro	Leu	Tyr	Gly	Asn	Glu	Gly	Leu	Gly	Trp	Ala	Gly	Trp
1318				85						90					95	
1319	Leu	Leu	Ser	Pro	Arg	Gly	Ser	Arg	Pro	Ser	Trp	Gly	Pro	Asn	Asp	Pro
1320			100						105					110		
1321	Arg	His	Arg	Ser	Arg	Asn	Val	Gly	Lys	Val	Ile	Asp	Thr	Leu	Thr	Cys
1322			115					120					125			
1323	Gly	Phe	Ala	Asp	Leu	Met	Gly	Tyr	Ile	Pro	Val	Val	Gly	Ala	Pro	Leu
1324		130					135					140				
1325	Gly	Gly	Val	Ala	Arg	Ala	Leu	Ala	His	Gly	Val	Arg	Val	Leu	Glu	Asp
1326	145					150				155					160	
1327	Gly	Val	Asn	Phe	Ala	Thr	Gly	Asn	Leu	Pro	Gly	Cys	Ser	Phe	Ser	Ile
1328				165					170					175		
1329	Phe	Leu	Leu	Ala	Leu	Leu	Ser	Cys	Ile	Thr	Thr	Pro	Val	Ser	Ala	Ala
1330			180						185					190		
1331	Glu	Val	Lys	Asn	Ile	Ser	Thr	Gly	Tyr	Met	Val	Thr	Asn	Asp	Cys	Thr
1332			195				200					205				

5

RAW SEQUENCE LISTING

DATE: 03/24/2006

PATENT APPLICATION: US/09/980,559C

TIME: 18:31:18

Input Set : A:\PTO.txt

Output Set: N:\CRF4\03242006\I980559C.raw

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1827 aggtttttctg cgttcagcct gagaagggggg gtcgtaagcc agctcgtctc atcgtgttcc 8100
1828 ccgacctggg cgtgcgcgtg tgcgagaaga tggccctgta cgacgtgggt agcaagctcc 8160
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hard
return

E--> 1853 gcagatcatg t 9611<210> 8

1854 <211> LENGTH: 3015

1855 <212> TYPE: PRT

1856 <213> ORGANISM: Hepatitis C virus

E--> 1858 <400> SEQUENCE: 8

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1862 20 25 30
1863 Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
1864 35 40 45
1865 Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
1866 50 55 60
1867 Ile Pro Lys Asp Arg Arg Ser Thr Gly Lys Ser Trp Gly Lys Pro Gly
1868 65 70 75 80
1869 Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Leu Gly Trp Ala Gly Trp
1870 85 90 95
1871 Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Asn Asp Pro
1872 100 105 110
1873 Arg His Arg Ser Arg Asn Val Gly Lys Val Ile Asp Thr Leu Thr Cys
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6

RAW SEQUENCE LISTING

DATE: 03/24/2006

PATENT APPLICATION: US/09/980,559C

TIME: 18:31:18

Input Set : A:\PTO.txt

Output Set: N:\CRF4\03242006\I980559C.raw

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E--> 2405 gcagatcatg t 9611<210> 10

2406 <211> LENGTH: 3015

2407 <212> TYPE: PRT

2408 <213> ORGANISM: Hepatitis C virus

E--> 2410 <210> SEQ ID NO:

E--> 2410 <400> SEQUENCE: 10

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2411 Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
2412 1 5 10 15
2413 Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
2414 20 25 30
2415 Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
2416 35 40 45

```

7

RAW SEQUENCE LISTING

DATE: 03/24/2006

PATENT APPLICATION: US/09/980,559C

TIME: 18:31:18

Input Set : A:\PTO.txt

Output Set: N:\CRF4\03242006\I980559C.raw

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3634 acgtagccgt gttgacgtcc atgctcactg atccctccca tataacagca gaggcggccg 6900
3635 ggagaagggtt ggcgagaggg tcacccccctt ctatggccag ctccctcggt agccagctgt 6960
3636 ccgctccatc tctcaaggca acttgacccg ccaaccatga ctccctgac gccgagctca 7020
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3639 aggtctccgt acctgcagaa attctgcgga agtctcgag attcgccccg gccctgcccg 7200
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3642 ctcggaaaaa gcgtacggtg gtccctaccg aatcaaccct atctactgcc ttggccgagc 7380
3643 ttgccaccaa aagttttggc agctcctcaa ctccggcat tacgggcgac aatacgacaa 7440
3644 catcctctga gcccgcctt tctggctgcc ccccgactc cgacgttgag tcctattctt 7500
3645 ccatgcccc cctggagggg gagcctgggg atccggatct cagcgacggg tcatggtcga 7560
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3647 caggcgcact cgtcaccctg tgcgtgcgg aagaacaaaa actgcccac aacgcactga 7680
3648 gcaactcgtt gctacgccat cacaatctgg tgtattccac cacttcacgc agtgcttgcc 7740
3649 aaaggcagaa gaaagtcaca ttgacagac tgcaagttct ggacagccat taccaggacg 7800
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3671 catgcctcag aaaacttggg gtcccgcctt tgcgagcttg gagacaccgg gcccgagcg 9120
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3673 actgggcagt aagaacaaag ctcaaactca ctccaatagc ggccgctggc cggctggact 9240
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3678 tttctttttt cttcttttaa tgggtggctcc atcttagccc tagtcacggc tagctgtgaa 9540
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E-->

8

RAW SEQUENCE LISTING

DATE: 03/24/2006

PATENT APPLICATION: US/09/980,559C

TIME: 18:31:18

Input Set : A:\PTO.txt

Output Set: N:\CRF4\03242006\I980559C.raw

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4225 tctggctggt tcgtcgctgg ttacagcggg ggagacatat atcacagcct gtctcgtgcc 9300
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4227 ctcccccaacc gatgaacggg gagctaacca ctccaggcct taagccattt cctgtttttt 9420
4228 tttttttttt tttttttttt ttcttttttt ttttctttcc tttcctttct tttttccttt 9480
4229 ctttttccct tctttaatgg tggctccatc ttagccctag tcacggctag ctgtgaaagg 9540 ✓
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4231 <211> LENGTH: 3010
4232 <212> TYPE: PRT
4233 <213> ORGANISM: Hepatitis C virus
E--> 4235 <210> SEQ ID NO:
E--> 4235 <400> SEQUENCE: 70
4236 Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
4237 1 5 10 15
4238 Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
4239 20 25 30
4240 Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
4241 35 40 45
4242 Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
4243 50 55 60
4244 Ile Pro Lys Ala Arg Arg Pro Glu Gly Arg Ala Trp Ala Gln Pro Gly
4245 65 70 75 80
4246 Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Leu Gly Trp Ala Gly Trp
4247 85 90 95
4248 Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Thr Asp Pro
4249 100 105 110
4250 Arg Arg Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys
4251 115 120 125
4252 Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu
4253 130 135 140
4254 Gly Gly Ala Ala Arg Ala Leu Ala His Gly Val Arg Val Leu Glu Asp
4255 145 150 155 160
4256 Gly Val Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile
4257 165 170 175
4258 Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Ile Pro Ala Ser Ala Tyr
4259 180 185 190
4260 Glu Val Arg Asn Val Ser Gly Ile Tyr His Val Thr Asn Asp Cys Ser
4261 195 200 205
4262 Asn Ser Ser Ile Val Tyr Glu Ala Ala Asp Val Ile Met His Thr Pro
4263 210 215 220
4264 Gly Cys Val Pro Cys Val Arg Glu Gly Asn Ser Ser Arg Cys Trp Val
4265 225 230 235 240
4266 Ala Leu Thr Pro Thr Leu Ala Ala Arg Asp Ala Ser Val Pro Thr Thr
4267 245 250 255
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4269 260 265 270
4270 Ser Ala Met Tyr Val Gly Asp Leu Cys Gly Ser Ile Phe Leu Val Ser
4271 275 280 285
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